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Claims

1. A sensor device for use in a human or animal, comprising a probe within which there is located a sensor for an analyte, the sensor device comprising a mesh
5 structure enveloping at least a portion of said probe.
2. A sensor device according to claim 1, in which the mesh structure comprises a plurality of filaments.
3. A sensor device according to claim 2, in which the mesh structure comprises a multiplicity of filaments.
- 10 4. A sensor device according to any one of the preceding claims, in which the filaments are strips of elongate cross-section.
5. A sensor device according to claim 4, in which the strips are of width from 5 μm to 50 μm .
- 15 6. A sensor device according to claim 4, in which the strips are of depth from 5 μm to 50 μm .
7. A sensor device according to any one of the preceding claims in which the mesh structure defines an open area of at least 0.3 cm^2 per cm^2 of the mesh structure.
- 20 8. A sensor device according to any one of the preceding claims, in which the mesh structure defines an open area of not more than 0.7 cm^2 per cm^2 of the mesh structure.
9. A sensor device according to any one of the preceding claims, in which the mesh structure comprises a plurality of

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helically wound filaments, at least a first said filament extending helically in the opposite sense to at least a second said filament.

10. A sensor device according to any one of the preceding
5 claims, in which the mesh structure is a woven mesh structure.
11. A sensor device according to any one of the preceding claims, in which the mesh structure comprises a multiplicity of interwoven filaments.
- 10 12. A sensor device according to any one of the preceding claims, in which first and second filaments are joined to one another at points of overlap therebetween.
13. A sensor device according to any one of the preceding claims, in which the mesh structure comprises filaments
15 comprising a metallic material.
14. A sensor device according to claim 13, in which the filaments comprise metallic ribbon.
15. A sensor device according to claim 13 or claim 14, in which the filaments comprise at least one metal selected
20 from the group consisting of stainless steel, titanium and gold.
16. A sensor device according to any one of claims 13 to 15, in which the filaments comprise a metallic core coated by a plastics material.

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17. A sensor device according to any one of the preceding claims, in which the mesh structure comprises filaments of plastics material.

18. A sensor device according to claim 14, in which the
5 filaments comprise a synthetic polymer material selected from the group consisting of polyamides, polyesters, polyurethanes, polyolefins and fluoropolymers.

19. A sensor device according to any one of the preceding claims in which points of overlap between filaments are
10 welded.

20. A sensor device according to any one of the preceding claims, in which the mesh structure is constructed from monofilaments.

21. A sensor device according to any one of claims 1 to 19,
15 in which the mesh structure is constructed of multifilament yarns.

22. A sensor device according to any one of the preceding claims, in which the mesh structure is a braid.

23. A sensor device according to any one of the preceding
20 claims, in which the probe comprises a matrix of a permeable material, and the sensor is located within the matrix.

24. A sensor device according to claim 23, in which the mesh defines openings, and the permeable material of the matrix extends at least partially into the openings.

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25. A sensor device according to claim 24, in which the permeable material substantially fills the opening, whereby the mesh structure and the permeable material filling said openings form a substantially smooth outer surface of the sensor device.
26. A sensor device according to any one of the preceding claims, in which the mesh structure is a mesh sleeve.
27. A sensor device according to claim 26, in which the external diameter of the mesh sleeve is from 0.5 to 1mm.
28. A sensor device according to any one of the preceding claims, in which the probe comprises first and second analyte sensors embedded in a matrix, the matrix being permeable to at least first and second analytes to be determined respectively by said first and second sensors.
29. A sensor device according to any one of the preceding claims, comprising a sensor for determining at least one parameter selected from pO_2 , pCO_2 and pH.
30. A sensor device according to claim 30, comprising a first sensor for pO_2 , a second sensor for pCO_2 and a third sensor for pH.
31. A sensor device according to any one of the preceding claims, which further comprises a temperature measurement device.

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32. A sensor device substantially as described herein with reference to and as illustrated by any one of Figs. 1 to 3.

33. A method of making a sensor device comprising maintaining a mesh sleeve in a first, expanded,

5 configuration, inserting one or more sensors into the mesh sleeve in said expanded configuration, causing the mesh sleeve to adapt a second, contracted configuration in which it has a smaller internal diameter than in the first configuration, and closing at least a distal end of the mesh
10 sleeve to enclose the sensor(s).

34. A method of monitoring myocardial tissue, comprising inserting into the myocardium of a patient a flexible sensor probe comprising a housing and a sensor therein for at least one analyte.

15 35. A method according to claim 34, in which the sensor probe comprises one or more optical sensors.

36. A method according to claim 34, in which the sensor probe is inserted before or during cardiac or coronary surgery to monitor blood gas perfusion during surgery.

20 37. A method according to claim 34, in which the sensor is inserted before, during or after cardiac or coronary surgery to monitor myocardial reperfusion post-operatively.

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